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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,092	05/10/2007	Paul Oreste Gioia	60838.000610	4356
21967 7590 07/30/2009 HUNTON & WILLIAMS LLP INTELLECTUAL PROPERTY DEPARTMENT 1900 K STREET, N.W. SUITE 1200 WASHINGTON, DC 20006-1109				
EXAMINER				
SOROUSH, ALI				
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07/30/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/588,092

**Applicant(s)**

GIOIA, PAUL ORESTE

**Examiner**

ALI SOROUSH

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15, 16 and 18-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 15, 16 and 18-30 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/30/2009 has been entered.

### ***Status of the Claims***

Claims 1-14 and 17 are cancelled and claims 15, 16, 20, 21, and 27-29 are currently amended. Therefore, claims 15, 16, and 18-30 are currently pending examination for patentability.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.

3. Ascertaining the differences between the prior art and the claims at issue; and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. The rejection of claims 15, 16, and 18-30 under 35 U.S.C. 103(a) as being unpatentable over Aven (European Patent Application EP 1025757 A1, Published 08/09/2000) in view of Hei et al. (US Patent 6593283 B2, Published 07/15/2003) as evidenced by Sealed Air (MSDS Instapak Port Cleaner, Rev. 006, 03/1005) **is maintained.**

### ***Applicant Claims***

Applicant claims an emulsifiable concentrate comprising an active ingredient being a dinitroaniline compound, emulsifier or emulsifier mixture, a solvent, and a cosolvent having the following formula  $R_1O-CO-(CH_2)_n-CO-OR_2$ .

### ***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

Aven teaches "Crop protection emulsifiable concentrate containing defoaming agents" (See title). "Emulsifiable concentrate (EC) formulations conventionally contain an active ingredient, one or more surfactants which act as emulsifiers upon dilution of the EC with water, and a water immiscible solvent. Typical solvents for conventional EC formulations are aromatic hydrocarbons such as xylene, Shellsol A or Solvesso 200." (See page 2, paragraph 0001). "The relative amount of solid active ingredient soluble in EC increases by about 40 to 60% when 10 to 15% cosolvent is incorporated into the formulation." (See page 8, paragraph 0062). "It has surprisingly been found that the

stable EC formulations containing at least one pesticidal crop protection active compound, at least one non polar organic solvent, optionally one polar aprotic cosolvent, an emulsifiable surfactant system, and at least one defoaming and foam breaking agent ... show clearly reduced foaming behavior upon dilution with water." (See page 3, paragraph 0015). "Preferably, the pesticide is selected from the group consisting of herbicides, insecticides, fungicides, bactericides, nematocides, algicides, molluscicides, virucides, compounds inducing resistance into plants, biological control agents such as viruses, bacteria, nematodes, fungi and other microorganisms, repellents of birds and animals, and plant growth regulators, or mixtures thereof." (See page 3, paragraph 0018). "Preferred herbicides are the compounds selected from the group consisting of: pendimethalin and trifluralin". (See page 4, paragraphs 0027 and 0028). "The suitable organic solvents in which the pesticide is dissolved are, as a rule, water-immiscible solvents. They are preferably selected from the group consisting of aromatic hydrocarbons, aliphatic hydrocarbons, carboxylic acid esters, alcohols, dialkylene glycol mono- or dialkyl ethers and esters of plant oils or mixtures thereof" (See page 5, paragraph 0034). "The water-miscible aprotic solvents used as cosolvents are useful to increase the amount of active ingredient and adjuvant in the EC." (See page 3, paragraph 0038). "In another preferred embodiment of the invention the cosolvent consists essentially of one or more, preferably two or three dimethyl dicarboxylates of formula  $H_3CO-CO-(CH_2)_n-CO-OCH_3$  wherein n is 2, 3, or 4. A particularly preferred cosolvent is a mixture consisting of glutaric acid dimethyl ester, succinic acid dimethyl ester, and adipic acid dimethyl ester, most preferred DBE ..."

(See page 3, paragraph 0039 and 0040). "The emulsifying surfactant system enabling the EC to form an oil-in-water emulsion when the formulation is added to water is a mixture of two or more surfactants, at least one of which is an anionic surfactant (a) and at least one of which is a nonionic surfactant (b). (See page 5, paragraph 0041). "Most preferred anionic surfactants are the sodium, calcium or triethyl ammonium salts of dodecyl benzene sulfonic acid ..." (See page 6, paragraph 0042). "Examples of non-ionic surfactants are nonylphenol polyethoxy ethanols, castor oil polyglycol ethers, polyadducts of ethylene oxide and propylene oxide, tributyl phenoxy polyethoxy ethanol, octyl phenoxy polyethoxy ethanol and tristyrilphenol ethoxylates ... Preferred are ethoxylated fatty acids such as castor or canola oil ethoxylates ... such as ... UKanil®2507(castor oil ethoxylate) ..." (See page 6, paragraphs 0043 and 0044). "Preferred embodiments of the invention are as follows: (i) An EC containing – 10 to 900 g/L, in particular, 100 to 850 g/L of at least one pesticidal crop protection active compound, - 50 to 800 g/L, in particular, 100 to 300 g/L of at least one non-polar organic solvent, -0 to 400 g/L, in particular, 0 to 250 g/L of at least one polar aprotic cosolvent, - 20 to 500 g/L, in particular, 40 to 450 g/L of the emulsifying surfactant system, and -0.1 to 20 g/L, in particular 0.2 to 10 g/L of at least one defoaming or foam breaking agent ..." (See page 7, paragraph 0058). In preferred example an EC formulation is prepared containing: 240 g/L Pendimethalin, 50 g/L Phenylsulfonat CA100, 50 g/L Ukanil 2507, 264 g/L Synperonic 91-6, 198 g/L DBE, 1 g/L Fluowet PP, and to 1L Agsol EX12. (See page 14, example 10). Phenylsulfant CA 100 is a mixture of calcium salt of branched

dodecyl benzene sulfonate, Genopol X-060, and Solvesso 200. (See page 9, paragraph 0069).

***Ascertainment of the Difference Between Scope the Prior Art and the Claims  
(MPEP §2141.012)***

Aven does not teach the co-solvent being a diisobutyl adipate or a mixture of diisobutyl adipate, diisobutyl glutarate, and diisobutyl succinate. This deficiency is cured by the teachings of Hei et al.

Hei et al. teaches an antimicrobial composition comprising a diluting solvent (water), an antimicrobially-active solvent, an optional cosolvent, surfactant, or additional antimicrobial surfactant. (See abstract). The preferred solvents include dibasic esters such as DBE and DBE-IB. (See column 7, Lines 1-27). The composition is suitable for application to growing or harvested plant material including leaves, stems, tubers, roots, seeds, and the like. (See column 12, Lines 13-15).

Sealed Air teaches that DBE-IB is composition comprising 55-70% Diisobutyl glutarate, 20-30% Diisobutyl succinate, and 10-20% Diisobutyl adipate. (See page 1, Section 2).

***Finding of Prima Facie Obviousness Rational and Motivation  
(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art to combine the teachings of Aven with Hei et al. One would have been motivated to do so because Hei et al. teaches that a composition useful for plant protection wherein the solvents DBE and DBE-IB are suitable alternatives for each other. Therefore, the instant emulsifiable

concentrate would have been obvious to one of ordinary skill in the art at the time of the instant invention.

### ***Response to Applicant's Arguments***

Applicant argues that the combined teachings of Aven and Hei et al. do not make the instant composition obvious, because applicants have found unexpectedly that the instant composition exhibit reduced crystallization. Applicant's arguments have been fully considered but found not to be persuasive. Applicant has only shown that the addition of a co-solvent having the following formula  $R_1O-CO-(CH_2)_n-CO-OR_2$  would reduce crystallization. Since, both DBE and DBE-IB both fall under the aforementioned co-solvent formula it would be expected that either one would result in reduced crystallization. Applicant also points to Example 1 wherein a comparative analysis was done between Applicant's invention and an emulsifiable pendimethalin concentrate marketed by BASF to show that Applicant's product does not crystallize in contrast to the BASF product. Applicant's unexpected data however does not show a side by side comparison of the closest prior art, i.e. Aven, and therefore is un-persuasive.

With regard to Applicant's amendments to claims 15 and 20 to limit the concentration of the active ingredient in the concentrate to at least 400 g/L, it is the Examiners position that Aven makes such a concentration obvious. Aven teaches that the active ingredient can be preferably present in an amount of 100 to 850 g/L of the emulsifiable concentrate. The instant concentration falls within the prior art teaching and one of ordinary skill would arrive at the instant concentration through routine



optimization of the emulsifiable concentrate taught by Aven. Therefore, the rejection of claims 15, 16, and 18-30 under 35 U.S.C. 103(a) is maintained.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ali Soroush whose telephone number is (571) 272-9925. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/588,092

Page 9

Art Unit: 1616

Ali Soroush  
Patent Examiner  
Art Unit: 1616

/Johann R. Richter/

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